REMARKS/ARGUMENTS

Entry of this response and reconsideration and allowance of the above-identified patent application are respectfully requested. Claims 1-49 were rejected. Claims 1 and 10 are amended. Upon entry of the present response, claims 1-49 will remain pending in the present application.

In the official action, claims 1-49 stand rejected under 35 U.S.C. § 102 (e) as allegedly being anticipated by Jungreis *et al.* (U.S. Patent No. 6,369,461) ("Jungreis"). In particular, the office action contends that Jungreis discloses, *inter alia*, maintaining DC voltage on the DC bus because Jungreis's "DC bus line has a low voltage that varies with the load but the boost converter -12 try to maintain constant dc voltage once it has determined the required voltage for the load." (*Office Action dated September 18, 2003* at p.3). Applicants respectfully disagree.

Briefly, the present invention is directed to converting direct current (DC) electrical voltage from a DC power source (*e.g.*, a fuel cell) to an alternating current (AC) voltage. In one embodiment, a converter (*e.g.*, a boost converter) coupled to a DC bus and to the DC power source, maintains a substantially constant voltage on the DC bus by regulating power from the DC power source. Applicants respectfully assert that Jungreis does not anticipate the present invention.

The office action recognizes that Jungreis's DC bus has a DC voltage that varies with the load on the bus. The office action contends, however, that Jungreis's boost converter 12 tries to maintain a constant DC voltage on the DC bus once it has determined the required load. With all due respect to the suggestion in the office action, there is no teaching in Jungreis to support such a contention.

As shown in its Figure 1, Jungreis controls the battery voltage to the DC bus with its boost converter. As noted expressly in Jungreis, "[t]he power from the battery 22 is supplied to the ***varying*** dc bus 14 through a boost converter 12. This boost converter allows full control of the battery power, so that the power drawn from the fuel cell can be ***gradually*** increased as the fuel supply is gradually increased." (*Jungreis* – column 2, lines 19-24) (emphasis added). In other words, Jungreis's design does not attempt to proactively maintain a substantially constant DC bus voltage, but instead reactively adjusts the DC bus voltage based on the load. As a result, Jungreis's DC bus voltage varies during the "gradual increasing" of power provided by the fuel cell. In fact, Jungreis expressly states as much when it designates the DC bus as a "varying LV DC bus 14" in its Figure 1. Jungreis recognizes that the DC bus will vary substantially with the load, and therefore designs its components (*e.g.*, inverter 16) accordingly. For example, Jungreis notes that "[t]he dc-to-ac inverter 16 in this circuit is designed to operate with a low voltage input." (*Jungreis* – column 2, lines 11-13).

Unlike Jungreis's use of the boost converter to control the ***battery***, the present invention contemplates using the boost converter to provide control of the ***fuel cell***. This is accomplished by having the fuel cell power flow through the boost converter, as illustrated in Figure 1 of the present specification. As a result, the present invention uses the boost converter to control the fuel cell and allow the DC bus voltage to remain substantially constant. As stated in the present Background of the Invention section, by maintaining a substantially constant DC bus voltage, the present invention is able to overcome the "many unusual constraints on the inverter device that is responsible for converting the fuel cell system's output to a regulated AC voltage." (*Specification* – page 2, lines 16-18). More

specifically, by maintaining a substantially constant DC voltage on the bus and therefore reducing the range of DC voltages that are provided to the inverter, traditional power inverters are able to "satisfy the requirements of the fuel cell system, particularly in stand-alone applications (*i.e.,* where the fuel cell inverter directly powers the load)."

Therefore, although similar components are used, the Examiner is respectfully requested to recognized that the circuit topology, and therefore the operation of the boost converters are different. This distinction is recited in the claims. For example, claims 1 and 10 have been amended to recite more clearly that which previously was implicit; namely, "maintaining a substantially constant DC voltage on a DC bus, as a function of controlling the DC power." Also, for example, claim 39 recites "a boost converter coupled to the fuel cell, wherein the boost converter maintains a substantially constant DC voltage on the DC bus by regulating power from the fuel cell."

Accordingly, applicant respectfully requests withdrawal of the rejection of claims 1-49 as allegedly being anticipated by Jungreis under 35 U.S.C. § 102 (e).

CONCLUSION

In view of the foregoing amendments and remarks, the present application is believed to be in condition for allowance, and a Notice of Allowability is respectfully solicited. In the event that the Examiner cannot allow the present application for any reason, the Examiner is encouraged to contact the undersigned attorney, Vincent J. Roccia at (215) 564-8946, to discuss resolution of any remaining issues.

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